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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ERIC J. BAUER, RANDEE SUSAN ADAMS,
and MARK M. CLOUGHERTY

(Applicant: Alcatel-Lucent USA Inc.)

Appeal 2017-001725
Application 14/058,413
Technology Center 2400

Before JEFFREY S. SMITH, JON M. JURGOVAN, and
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

SZPONDOWSKI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

STATEMENT OF THE CASE

Appellants' invention is directed to managing the placement of virtual resources using cloud-based services. Spec. ¶ 1. Claim 1, reproduced below with the disputed limitations in *italics*, is representative of the claimed subject matter:

1. An apparatus, comprising:

a processor and a memory communicatively connected to the processor, the processor configured to:

receive configuration information indicative of placement of virtual resources of a cloud consumer on physical resources of a cloud environment of a cloud service provider;

receive a virtual resource placement policy of the cloud consumer; and

determine, based on the configuration information and the virtual resource placement policy of the cloud consumer, whether the placement of the virtual resources of the cloud consumer on the physical resources of the cloud service provider satisfies or violates the virtual resource placement policy of the cloud consumer.

REJECTIONS

Claims 1–20 stand rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter. Final Act. 2–3.

Claims 1, 2, 8, 10, 12, and 14–20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Rosensweig et al. (US 2014/0101300 A1; published Apr. 10, 2014) ("Rosensweig"), and Conklin et al. (US 2015/0058844 A1; published Feb. 26, 2015) ("Conklin"). Final Act. 3–12.

Claims 3, 4, 5, 6, and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Rosensweig, Conklin, and Srinivas et al. (US 2007/0033194 A1; published Feb. 8, 2007) ("Srinivas"). Final Act. 12–16.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Rosensweig, Conklin, Srinivas, and Shiva et al. (WO 2013/019185 A1; published February 7, 2013) ("Shiva"). Final Act. 16–19.

ANALYSIS

After considering each of Appellants' arguments, we agree with the Examiner. We refer to, rely on, and adopt the Examiner's findings and conclusions as set forth in the Examiner's Answer and in the action from which this appeal was taken. Ans. 3–31; Final Act. 2–23. Our discussion will be limited to the following points of emphasis.

§ 101 Rejections

Issue: Did the Examiner err in concluding the claims are directed to nonstatutory subject matter?

Alice Corp. Pty. Ltd. v. CLS Bank International, 134 S.Ct. 2347 (2014) identifies a two-step framework for determining whether claimed subject matter is judicially-excepted from patent eligibility under 35 U.S.C. § 101. In the first step, "[w]e must first determine whether the claims at issue are directed to a patent-ineligible concept." *Alice*, 134 S.Ct. at 2355.

The Examiner concludes "[c]laims 1–20 is/are directed to an abstract idea/mathematical function consisting of comparing new and stored information and using rules to identify options." Final Act. 2–3.

Appellants contend "claim 1 is not directed to an abstract idea." App. Br. 13. Appellants argue the Examiner "fails to cite any case law precedent" and fails "to provide the required comparison between case law precedent and independent claim 1." *Id.* at 14, emphasis omitted; *see also* Reply Br. 2. Appellants further argue the Examiner "impermissibly describes the claim at a high level of abstraction untethered from the language of the claim." App. Br. 13.

Appellants' arguments are not persuasive. We find the Examiner has properly and reasonably found that claims 1–20 are directed to the abstract idea of "comparing new and stored information and using rules to identify options." *See* Final Act. 2–3; Ans. 27–29. Claim 1, for example, recites a processor configured to (1) receive configuration information indicative of placement of virtual resources of a cloud consumer on physical resources or a cloud environment of a cloud service provider; (2) receive a virtual resource placement policy of the cloud consumer; and (3) determine, based on the configuration information and the virtual resource placement policy of the cloud consumer, whether the placement of the virtual resources of the cloud consumer on the physical resources of the cloud service provider satisfies or violates the virtual resource placement policy of the cloud consumer. Independent claims 18, 19, and 20 recite the same or similar limitations and parallel claim 1 in method, non-transitory computer readable media, and apparatus form.

The limitations recited involve nothing more than receiving data and rules, i.e., configuration information and a virtual resource placement policy, and comparing the data and rules, i.e., determining whether there is a violation. Such activities are squarely within the realm of abstract ideas.

See, e.g., Elec. Power Grp. LLC v. Alstom, 830 F.3d 1350 (Fed. Cir. 2016) (characterizing collecting information, analyzing information by steps people go through in their minds, or by mathematical algorithms, and presenting the results of collecting and analyzing information, without more, as matters within the realm of abstract ideas); *Content Extraction & Transmission v. Wells Fargo Bank*, 776 F.3d 1343 (Fed. Cir. 2014) (characterizing collecting data, recognizing certain data within the collected data set, and storing the recognized data in memory as drawn to an abstract idea); *SmartGene, Inc. v. Advanced Biological Labs., SA*, 555 Fed. Appx. 950, 955 (Fed. Cir. 2014) ("comparing new and stored information and using rules to identify medical options" is an abstract idea).

We do not see that Appellants have adequately shown the claims are not directed to an abstract idea. Although the claim language includes more words than the phrase the Examiner used to articulate the abstract idea, this is an insufficient reason to persuasively argue claim 1 is not directed to an abstract idea. *Cf. Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240–1241 (Fed. Cir. 2016) ("An abstract idea can generally be described at different levels of abstraction. As the Board has done, the claimed abstract idea could be described as generating menus on a computer, or generating a second menu from a first menu and sending the second menu to another location. It could be described in other ways, including, as indicated in the specification, taking orders from restaurant customers on a computer.") Further, simply because the Examiner did not identify a specific case to which the present claims are analogous, also does not mean the rejection is in error. The Examiner has provided a reasoned rationale that identifies the judicial exception recited in the claims, i.e., abstract idea, and explained why it is an

exception. *See* Ans. 27–29; Final Act. 2–3. Appellants have not provided persuasive rebuttal evidence showing the claims are *not* directed to an abstract idea, or that comparing new and stored information and using rules to identify options—irrespective of the level of abstraction which it is described—is not an abstract idea.

In the second step of *Alice*, we "consider the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Alice*, 134 S.Ct. at 2355 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.Ct. 1289, 1297–98 (2012)). In other words, the second is to "search for an 'inventive concept' – i.e., an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Id.* (quoting *Mayo*, 132 S.Ct. at 1294).

Appellants contend "the Examiner has not properly applied the test for subject matter eligibility under Step 2B of the subject matter eligibility analysis." App. Br. 15–16. Appellants argue "as in DDR Holdings, Appellants' claim 1 is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks." *Id.* at 16. In that regard, Appellants argue "claim 1 addresses the problem of determining compliance of a placement of virtual resources of a cloud consumer with a virtual resource placement policy of the cloud consumer." *Id.*; *see* Reply Br. 3. Appellants further argue the "determine . . ." limitation "is a non-conventional arrangement, at least because cloud consumers typically are not provided any control over the manner in which their cloud

resources are placed within the cloud of the cloud service provider." Reply Br. 3–4.

We are not persuaded. Contrary to Appellants' argument, the claims at issue here are not like the claims at issue in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014). The claims at issue in *DDR Holdings* were directed to retaining website visitors, and in particular to a system that modified the conventional web browsing experience by directing a user of a host website who clicks an advertisement to a "store within a store" on the host website, rather directing the user to an advertiser's third-party website. *DDR Holdings*, 773 F.3d at 1257–1258. The Court determined "the claims address a business challenge (retaining website visitors) [that] is a challenge particular to the Internet." *Id.* at 1257. The Court also determined that the invention was "necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks," and that the claimed invention did not simply use computers to serve a conventional business purpose. *Id.* Rather, there was a change to the routine, conventional functioning of Internet hyperlink protocol. *Id.*

Here, "determining compliance with a policy" (*see* Reply Br. 3) is not a challenge particular to computer networks, nor is it necessarily rooted in computer technology. Rather, it is an implementation on generic computer components of the abstract idea itself. Even accepting Appellants' assertion that the claim addresses a challenge particular to computer networks, we are not persuaded that they do so by achieving a result that overrides the routine and conventional use of the recited devices and functions.

Appellants do not adequately show how the claims are technically performed such that they are not routine, conventional functions of a generic computer, nor do the Appellants provide evidence why the claims are not routine and conventional functions of a generic computer. There is no indication in the record that any specialized computer hardware or other 'inventive' computer components are required. To the contrary, the Specification explicitly discloses:

> It will be appreciated that the functions depicted and described herein may be implemented in software (e.g., via implementation of software on one or more processors, for executing on a general purpose computer (e.g., via execution by one or more processors) so as to implement a special purpose computer, and the like) and/or may be implemented in hardware (e.g., using a general purpose computer, one or more application specific integrated circuits (ASIC), or any other hardware equivalents).

Spec. 26; *see also* Spec. Fig. 5. As the Examiner observes, "even adding generic computer elements does not add a meaningful limitation to the abstract idea because they would be routine in any computer implementation." *See* Final Act. 3; *see e.g., DDR Holdings,* 773 F.3d at 1256 ("[A]fter *Alice*, there can remain no doubt: recitation of generic computer limitations does not make an otherwise ineligible claim patent-eligible. The bare fact that a computer exists in the physical rather than purely conceptual realm is 'beside the point.'" (Citation omitted)). Appellants' claims merely employ generic computer components to perform generic computer functions, i.e., receiving and comparing information, which is not enough to transform an abstract idea into a patent-eligible invention.

We find, as did the Examiner, that claims 1–20 are directed to the abstract idea of comparing new and stored information and using rules to identify options. Narrowing that abstract idea to cloud-based services merely limits the use of the abstract idea to a particular technological environment, which the Court made clear in *Alice* is insufficient to transform an otherwise patent-ineligible abstract idea into a patent-eligible subject matter. *See Alice Corp.*, 134 S. Ct. at 2358. Therefore, we sustain the Examiner's rejection of claims 1–20 under 35 U.S.C. § 101.

§ 103(a) Rejections

Issue: Did the Examiner err in finding the combination of Rosensweig and Conklin teaches or suggests "determine, based on the configuration information and the virtual resource placement policy of the cloud consumer, whether the placement of the virtual resources of the cloud consumer on the physical resources of the cloud service provider satisfies or violates the virtual resource placement policy of the cloud consumer," as recited in independent claim 1 and commensurately recited in independent claims 18, 19 and 20?

Appellants contend Conklin "is devoid of any teaching or suggestion of a virtual resource placement policy of a cloud consumer." App. Br. 18, emphasis omitted. Appellants argue "the cited portion of Conklin merely discloses 'determining if the environmental data or the VM data violate predetermined threshold values respectively related to the environmental data and the VM [virtual machine] data.'" *Id.*, emphasis omitted. Appellants further argue "the environmental data is environmental data related to an operational characteristic of a compute resource for hosting a

VM . . . and the VM data is related to an operational characteristic of the VM." *Id.*; *see* Reply Br. 6.

We are not persuaded by Appellants' arguments because they do not persuasively address the Examiner's rejection. "[O]ne cannot show non-obviousness by attacking references individually where ... the rejections are based on combinations of references." *In re Keller*, 642 F.2d 413, 426 (CCPA 1981) (internal citation omitted).

Rosensweig teaches a cloud controller that receives a recipe file, which defines a cloud application that the user wishes to be established, and a policy file, which defines a number of segments and constraints on component placement to be used when establishing and scaling the application defined in the recipe file. Rosensweig ¶ 62. Conklin generally describes orchestrating virtual computing resources. Conklin Abstract. Specifically, Conklin teaches "receiving environmental data related to an operational characteristic of a compute resource for hosting a virtual machine (VM), receiving VM data related to an operational characteristic of the VM, and determining if the environmental data or the VM data violate predetermined threshold values respectively related to the environmental data and the VM data." Conklin, Abstract; *see also* Conklin ¶¶ 21, 26, 27.

The Examiner relies on the combination of Rosensweig and Conklin to teach or suggest the disputed limitation. Final Act. 3–5; Ans. 29–31. As the Examiner explains, Conklin "was brought into the combination for the determination of violations or satisfying of VM resources and further resolving the violations." Ans. 31. The Examiner modifies Rosensweig with Conklin's teachings "for checking or verifying that the placement of virtual resources of the cloud consumer to the physical resources of the

cloud provider is in compliance with the virtual placement policy" in order to "help[] allocate VM resources more efficiently." Final Act. 4–5. Thus, we find Appellants' arguments that address Conklin individually unpersuasive because they do not address the combination articulated by the Examiner. *See In re Keller*, 642 F.2d at 426.

Appellants further argue the Examiner "mapp[ed] the recipe file of Rosensweig to the VM data of Conklin" and "mapp[ed] the policy file of Rosensweig to the environmental data of Conklin." Reply Br. 7. According to Appellants, combining the features of Rosenweig and Conklin would not have been obvious, because the information in the recipe file of Rosenweig is "completely different" from the information in the VM file of Conklin. *Id.* However, Appellants have not persuasively addressed the Examiner's combination. In particular, Appellants have not provided persuasive evidence or argument to rebut the Examiner's findings that a person of ordinary skill in the art would have modified Rosensweig's cloud controller that receives a recipe file and a policy file defining constraints on component placement, to verify compliance with the placement policy as taught by Conklin, for the benefit of allocating resources more efficiently as taught by Conklin. Final Act. 4–5.

In addition, Appellants argue "the proposed combination of Rosensweig and Conklin would merely result in a system in which four types of information are available (namely, the recipe file and the policy file from Rosensweig and the VM data and the environmental data from Conklin)." Reply Br. 10. Appellants argue "the modification of Rosensweig to include the VM data and the environmental data (and related teachings) from Conklin fails to bridge the substantial gap between

Rosensweig and Appellants' claim 1." *Id.* We are not persuaded by Appellants' arguments because the test for obviousness is not whether the features of one references may be bodily incorporated into another reference. Rather, the relevant inquiry is whether the claimed subject matter would have been obvious to those of ordinary skill in the art in light of the combined teachings of those references. *Keller*, 642 F.2d at 425. For the reasons set forth by the Examiner (Final Act. 3–5; Ans. 29–31), we agree the combination of Rosensweig and Conklin teaches or suggests the disputed limitation.

Accordingly, we are not persuaded the Examiner erred. Therefore, we sustain the Examiner's 35 U.S.C. § 103(a) rejection of independent claims 1, 18, and 19. Appellants' present similar arguments for independent claim 20 (App. Br. 20–22), which we reject for the same reasons. For the same reasons we also sustain the Examiner's 35 U.S.C. § 103(a) rejection of dependent claims 2–17, which were not separately argued (*see* App. Br. 23–24).

DECISION

The Examiner's 35 U.S.C. § 101 rejection of claims 1–20 is affirmed.

The Examiner's 35 U.S.C. § 103(a) rejection of claims 1–20 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED